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perfect in all other particulars. A large plant running along a rafter in his greenhouse, and producing hundreds of flowers, bore these dimorphous ones in about equal proportions. He said it was well known that in cultivation this plant never produced fruit unless by artificial cross-impregnation, but he thought the tendency to abort in the female flowers, and thus approach the classes which were in structure as well as practically uni-sexual, had not been noticed before. There was a species in New Zealand, however, known to be monœcious, and it might be just possible that the *Passifloraceæ*, with mostly hermaphrodite flowers, were following in the wake of the allied *Cucurbitaceæ*, in which a complete separation of the sexes was the rule.

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JANUARY 13.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-six members present.

*Remarks on Hydra.*—Prof. LEIDY remarked that two species of *Hydra* were common in the neighborhood of Philadelphia. One is of a light brownish hue and is found on the under side of stones and on aquatic plants in the Delaware and Schuylkill rivers, and in ditches communicating with the same. Preserved in an aquarium, after some days the animals will often elongate the tentacula for several inches in length. The green *Hydra* is found in ponds and springs attached to aquatic plants. It has from six to eight tentacles, which never elongate to the extent they do in the brown *Hydra*. In winter the animal is frequently observed with the male organs developed just below the head as a mamma-like process on each side of the body. He had not been able to satisfy himself that these *Hydræ* were different from *H. fusca* and *H. viridis* of Europe. Prof. Agassiz had indicated similar colored forms in Massachusetts and Connecticut, under the names of *H. carnea* and *H. gracilis*. Of the former he remarks that it has very short tentacles, and if this is correct under all circumstances, it must be different from our brown *Hydra*, which can elongate its arms for three inches or more.

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JANUARY 20.

The President, Dr. RUSCHENBERGER, in the chair.

Thirty members present.

Prof. E. D. COPE described some species of extinct tortoises from certain formations of Northeastern Colorado, which had been previously found in the Fort Union or lignite beds of the Missouri river region by Dr. Hayden. He had in 1868 recognized

the age of the latter as cretaceous, contrary to the opinion expressed by some geologists, that the formation both in Dakota and Colorado is tertiary.

Mr. COPE incidentally mentioned the recent discovery of remains of *Dinosaurs* in the lignite beds of Colorado, which were thus proved to belong to the cretaceous period, and not tertiary, as the evidence of the fossil plants had been interpreted by Mr. Lesquereux and others.

Dr. LeCONTE expressed his great satisfaction at the complete confirmation, by his friend Mr. Cope, of the statements he made several years ago,<sup>1</sup> concerning the cretaceous age of the lignites at the eastern base of the Rocky Mountains, from near Denver southwards into New Mexico. Dr. LeConte had discussed the subject on page 19, and more fully on 65 and 66 of his report. He had, it is true, expressed on page 65 a suspicion that the lignites of the Missouri basin might be of miocene age, but it would be seen by the narrative part of the report that Dr. LeConte had not examined these beds personally, and their tertiary age was assumed only in deference to the very strongly expressed opinion of Dr. Hayden, "the pioneer and most successful explorer of the Missouri basin" (Report, page 53), who was the first, as he has been the most persistent advocate of this view. While admitting the similarity of the flora of these lignites to those of known tertiary localities, he had insisted on the greater value of the stratigraphical and zoological evidence by which they were shown to be cretaceous. He referred Mr. Cope to this report, that he might see how perfectly these recent discoveries accorded with the previously expressed views, which Mr. Cope had, perhaps inadvertently, omitted to mention.

Mr. COPE replied that he was quite familiar with the report of Dr. LeConte, but did not consider stratigraphical evidence of value as compared with palæontological in this instance, because the beds display continuity of deposit from cretaceous to tertiary (Hayden), while the fauna and flora exhibit an interruption.

Prof. FRAZER remarked that in this opinion Mr. Cope differed from geologists generally, who regarded the weight of palæontological evidence as based entirely on our previous knowledge of stratigraphical relations, and where the field was so new as our Western territories, the evidences of palæontology as establishing synchronism with the geological ages of Europe must be received with great caution.

<sup>1</sup> Notes on the Geology of the Survey for the Extension of the Union Pacific Railway, Eastern Division. Philadelphia, Feb. 1867.